

Tuesday, September 27, 2016 11:54:59 AM

Page 1

Stop ***NR2***

Draw Nbr	Revision Nbr
D2940	C

0.07

0.76

Memo

1-Machine as per Folio FA079
2-Deburr

0.00

QC2- Inspect parts off machine FAI/FAIB

0.01

Memo

Quality Control

0.00

QC8- Inspect parts - second check

0.03

Memo

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 151516***151516***

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Tuesday, September 27, 2016 11:54:59 AM

Item ID:	D2940-1	Accept	*N900040100*	Setup	Start	*NS1*
Revision ID:					Stop	*NS2*
Item Name:	Support					
Start Date:	9/28/2016	Start Qty: 8.00	*8*	Cust Item ID:		
Required Date:	10/13/2016	Req'd Qty: 8.00	*8*	Customer:		
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC21- Final Inspection - Work Order Release	0.00					DAS 21 9-29		
180									
QC	Memo	0.13							
Quality Control									

16-12-05

DEC 05 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified ☐	☐	Past Due	☐				

Picklist Print

Tuesday, September 27, 2016 11:54:59 AM

Page 1

Work Order ID: 151516

151516

Parent Item: D2940-1

D2940-1

Parent Item Name: Support

Start Date: 9/28/2016

Required Date: 10/13/2016

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP C 02.11.26 Reformat; Added P/OKJ
IPP Rev:D Added priming as per Rev B 07-04-30 JLM
IPP E 08.03.19 Re-format Ec verified by DD
IPP Rev:F 08-10-22 add qc14 DD verified by:EC
11.08.04 as per dwg rev.C DD verf:EC
IPP Rev:G

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
DSK081		Manufactured	No			110	Each	9.0000	0.5	4.210526			
DSK081									**				
D2940-1 Turning Detail													

DAS
44
9-29 16-11-07

Location

Loc Qty

Loc Code

MAT060

9

146795

1

149198

8

1
7

DQA: _____ Date: _____

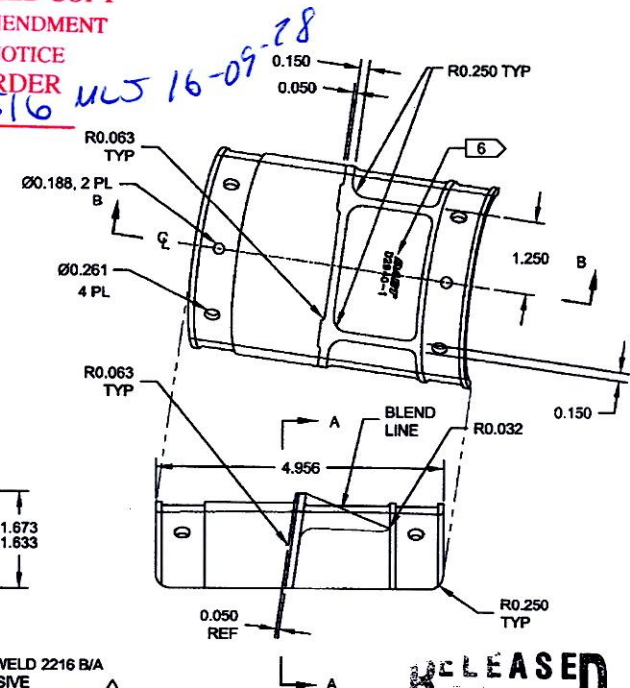
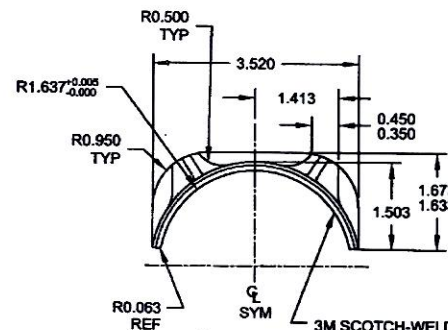
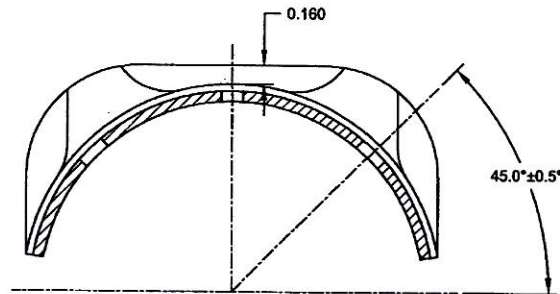
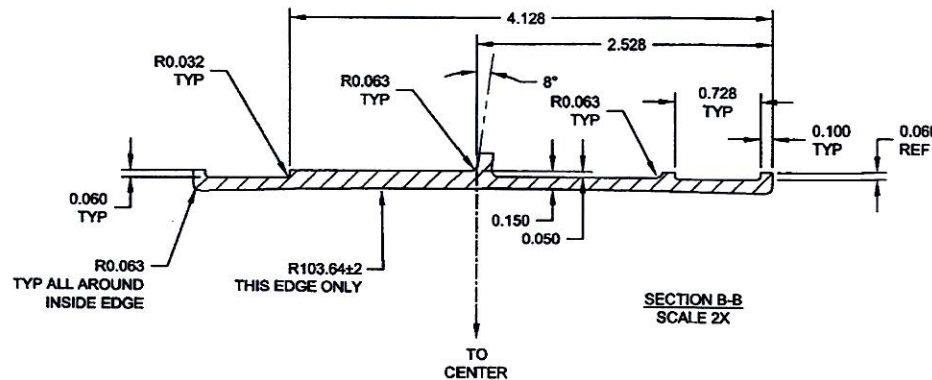
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151516 *UJ 16-09-28*



RELEASED
2011-07-28

D2940-1 SUPPORT

NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION
MIN UTS = 170 KSI (38 HRC)
(REF DART SPEC. D6104)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 (REF X.XXX = ±0.010) UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP, PER DART QSI 044 6.3.
- 7) WEIGHT: 0.92 lb
- 8) FOR THE ENTIRE INNER CONCAVE SURFACE:
ABRADE SURFACE WITH 400-GRIT SANDPAPER. REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY 0.03" TO 0.05" THICK LAYER OF 3M SCOTCH-WELD 2216 B/A ADHESIVE TO MATING SURFACE OF SUPPORT. ALLOW TO CURE FOR 24 HOURS.

C	RMV FINISH, ADD 3M 2216, ADD H925 MAT'L OPTION	CP	11.07.15
B	UPDATE PER NCR 642, PRIME INSIDE	PH	07.03.13
A	NEW ISSUE	CP	01.01.10
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	11.07.15		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D2940	REV. C SHEET 1 OF 1
TITLE Ø3.250 SUPPORT	SCALE NTS
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DART AEROSPACE LTD		Work Order:	151516
Description: Ø3.250 Support		Part Number:	D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AB	0.490	0.510		0.500	0.500	0.500	0.500	0.500
AC	0.140	0.160		0.160	0.160	0.160	0.160	0.160
AD	3.510	3.530		3.517	3.517	3.519	3.520	3.517
AE	1.633	1.673		1.664	1.664	1.665	1.664	1.662
AF	1.493	1.513		1.508	1.508	1.509	1.507	1.509
AG	0.040	0.060		0.047	0.047	0.048	0.047	0.050
AH	0.188	0.193		0.190	0.190	0.190	0.190	0.190
AI	0.140	0.160		0.147	0.147	0.146	0.146	0.148
AJ	2.518	2.538		2.528	2.528	2.528	2.528	2.528
AK	0.040	0.060		0.050	0.050	0.050	0.050	0.050
AL	0.010	0.020		0.010	0.010	0.010	0.010	0.010
AM	0.140	0.160		0.145	0.145	0.145	0.145	0.145
AN	0.350	0.450		0.400	0.400	0.375	0.375	0.375
AO	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AP	0.150	0.170		0.155	0.158	0.158	0.156	0.151
AQ	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AR	101.64	105.64		103.64	103.64	103.64	103.64	103.64
AS	0.260	0.267		0.263	0.263	0.263	0.263	0.263
AT	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AU	4.118	4.138		4.130	4.130	4.130	4.130	4.130
AV								
AW								
Accept/Reject				✓	✓	✓	✓	✓

Measured by:	DAS 33	Date:	16/11/21
Audited by:	DAS 44 9-89	Date:	16-11-29
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	

DART AEROSPACE LTD		Work Order:	151516
Description: Ø3.250 Support		Part Number:	D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	6	7	8	9	10
HAAS Section								
AA	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AB	0.490	0.510		0.500	0.500	0.500	0.500	0.500
AC	0.140	0.160		0.160	0.160	0.160	0.160	0.160
AD	3.510	3.530		3.517	3.517	3.517	3.519	3.517
AE	1.633	1.673		1.666	1.663	1.666	1.664	1.665
AF	1.493	1.513		1.510	1.506	1.507	1.507	1.509
AG	0.040	0.060		0.049	0.047	0.047	0.047	0.049
AH	0.188	0.193		0.190	0.190	0.190	0.190	0.190
AI	0.140	0.160		0.148	0.147	0.147	0.146	0.148
AJ	2.518	2.538		2.528	2.529	2.528	2.528	2.528
AK	0.040	0.060		0.050	0.050	0.050	0.050	0.050
AL	0.010	0.020		0.010	0.010	0.010	0.010	0.010
AM	0.140	0.160		0.145	0.142	0.145	0.145	0.145
AN	0.350	0.450		0.375	0.375	0.375	0.375	0.375
AO	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AP	0.150	0.170		0.155	0.156	0.157	0.156	0.154
AQ	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AR	101.64	105.64		103.64	103.64	103.64	103.64	103.64
AS	0.260	0.267		0.265	0.263	0.263	0.263	0.263
AT	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AU	4.118	4.138		4.130	4.130	4.130	4.130	4.130
AV								
AW								
Accept/Reject				✓	✓	✓	✓	✓

Measured by:	DAS 33 9-89	Date:	16/11/26
Audited by:	44 9-89	Date:	16-11-29
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	

DART AEROSPACE LTD		Work Order:	151516
Description: Ø3.250 Support		Part Number:	D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	11	12	13	14	15
HAAS Section								
AA	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AB	0.490	0.510		0.500	0.500	0.500	0.500	0.500
AC	0.140	0.160		0.160	0.160	0.160	0.160	0.160
AD	3.510	3.530		3.519	3.518	3.518	3.518	3.518
AE	1.633	1.673		1.663	1.664	1.662	1.665	1.665
AF	1.493	1.513		1.509	1.510	1.512	1.508	1.508
AG	0.040	0.060		0.047	0.049	0.053	0.047	0.047
AH	0.188	0.193		0.190	0.190	0.190	0.190	0.190
AI	0.140	0.160		0.148	0.145	0.147	0.146	0.146
AJ	2.518	2.538		2.528	2.528	2.528	2.528	2.528
AK	0.040	0.060		0.050	0.050	0.050	0.050	0.050
AL	0.010	0.020		0.010	0.010	0.010	0.010	0.010
AM	0.140	0.160		0.145	0.145	0.145	0.145	0.145
AN	0.350	0.450		0.375	0.375	0.375	0.375	0.375
AO	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AP	0.150	0.170		0.155	0.153	0.151	0.154	0.154
AQ	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AR	101.64	105.64		103.64	103.64	103.64	103.64	103.64
AS	0.260	0.267		0.263	0.263	0.263	0.263	0.263
AT	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AU	4.118	4.138		4.130	4.130	4.130	4.130	4.130
AV								
AW								
Accept/Reject				✓	✓	✓	✓	✓

Measured by:	DAS 33 9-89	Date:	16/11/26
Audited by:	44 9-89	Date:	16-11-29
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	

DART AEROSPACE LTD		Work Order:	151516
Description: Ø3.250 Support		Part Number:	D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				16	16	16	16	16
HAAS Section								
AA	0.240	0.260		0.250				
AB	0.490	0.510		0.500				
AC	0.140	0.160		0.160				
AD	3.510	3.530		3.518				
AE	1.633	1.673		1.665				
AF	1.493	1.513		1.502				
AG	0.040	0.060		0.047				
AH	0.188	0.193		0.190				
AI	0.140	0.160		0.146				
AJ	2.518	2.538		2.528				
AK	0.040	0.060		0.050				
AL	0.010	0.020		0.010				
AM	0.140	0.160		0.145				
AN	0.350	0.450		0.375				
AO	0.240	0.260		0.250				
AP	0.150	0.170		0.155				
AQ	0.053	0.073		0.063				
AR	101.64	105.64		103.64				
AS	0.260	0.267		0.263				
AT	0.053	0.073		0.063				
AU	4.118	4.138		4.130				
AV								
AW								
Accept/Reject				✓				

Measured by:	DAS 33 9-89	Date:	16/11/26
Audited by:	44 9-89	Date:	16-11-29
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	